
सीसा सील — विशिष्टि

(पहला पुनरीक्षण)

Lead Seal — Specification

(First Revision)

ICS 77.150.60

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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Ores and Feed Stock for Non-Ferrous (Excluding Aluminium and Copper) Industry, their Metals/Alloys and Products Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was originally published in 1993. This revision has been brought out to bring the standard in the latest style and format of the Indian Standards. It also incorporates Amendment No.1 issued to the last version of the standard. In addition, the following changes have been made:

- a) The chemical composition clause has been modified by incorporating the call for agreement between the purchaser and the manufacturer, in case the referee method is not able to determine the elements;
- b) Clause 2 'References' has been modified as per the latest format, which calls for investigating the possibility of applying the most recent editions of the standards referred;
- c) BIS marking clause has been updated as per *Bureau of Indian Standards Act, 2016*;
- d) Corrections of editorial/typographical mistakes in the existing standard; and
- e) Updation of back cover page with mention of new document number, current details of information shared therein including BIS offices.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirements of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical value (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
LEAD SEAL — SPECIFICATION
(First Revision)

1 SCOPE

This standard covers the requirement of lead seal used for sealing purpose.

2 REFERENCES

The standards given below contain provisions, which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards:

<i>IS No.</i>	<i>Title</i>
IS 27 : 1992	Pig lead-specification (<i>fourth revision</i>)
IS 403 : 1964	Methods of chemical analysis of lead and antimonial lead (<i>revised</i>)
IS 1387 : 1993	General requirements for the supply of metallurgical materials (<i>second revision</i>)
IS 3717 : 1977	Specification for refined secondary lead (<i>first revision</i>)
IS 8439 : 1977	Methods of sampling lead and lead alloys

3 SUPPLY OF MATERIAL

General requirements relating to the supply of lead seal shall conform to IS 1387.

4 FREEDOM FROM DEFECTS

The passage of the lead seal, through which the twine string or tape will pass, shall be clear, straight and free from any burrs.

5 CHEMICAL COMPOSITION

5.1 The chemical composition of the lead seals shall conform to the requirement of any grade of lead covered in IS 27 or IS 3717.

5.2 The chemical composition shall be determined either by the methods specified in IS 403 or any

other established instrumental/chemical method. In case of dispute, the procedure specified in IS 403 shall be the referee method. However, where the method of analysis for a particular element is not given in IS 403, the referee method for the analysis shall be as mutually agreed to between the purchaser and the manufacturer.

6 PHYSICAL PROPERTIES

6.1 The lead seal shall be capable of being flattened out at least twice the original diameter, without cracking.

6.2 The lead seal shall be capable of giving a clear replica of sealing dies and stamps.

7 DIMENSIONS

Typical dimensions of Type I, Type II and Type III lead seal used for sealing purpose are given in Fig. 1 for guidance only.

8 MASS

The actual mass of 1 000 lead seals measured together shall be within ± 2.5 percent from nominal mass to be agreed between the purchaser and the manufacturer.

9 SAMPLING**9.1 Chemical Analysis**

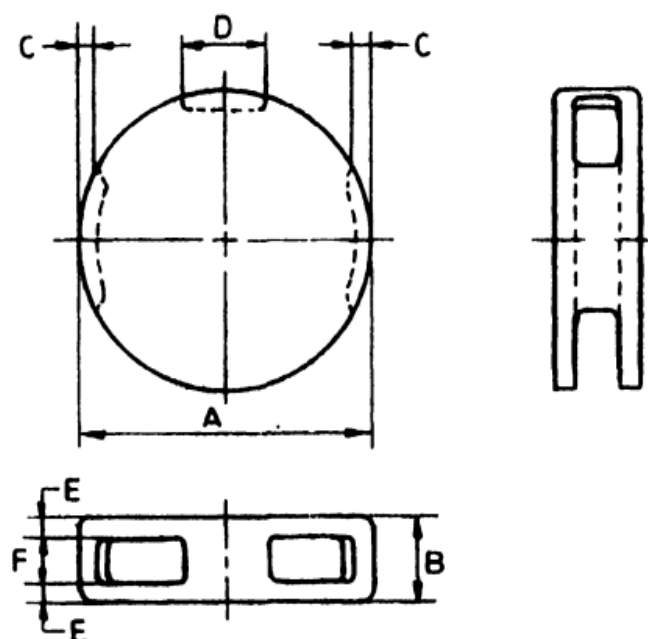
One sample from each consignment of 1 000 kg or part thereof, produced under uniform condition of manufacture, shall be selected for chemical analysis. The sample shall consist of at least 10 seals selected at random from the consignment. The sample for chemical analysis shall be prepared in accordance with IS 8439.

9.2 Mass

One sample consisting of 1 000 seals shall be selected from each lot of 1 000 kg or part thereof.

9.3 Other Tests

One seal per 500 seals, from each lot produced under uniform condition of manufacture, shall be selected for testing.



Sl No.	Type	Dimensions of Lead Seal (mm)					
		A	B	C	D	E	F
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	I	10	5	1.0	1.5	1.2	2.6
ii)	II	13	5	1.3	3.0	1.2	2.6
iii)	III	17.5	5.4	1.6	5.0	1.2	3.0

FIG. 1 TYPICAL DIMENSIONS OF LEAD SEAL IN MILLIMETERS

10 RETEST

10.1 Chemical Composition

If the sample prepared under 9.1 and tested fails to meet the requirements of chemical composition specified in 5, two more tests shall be conducted on the same sample in order to confirm that the analysis has been done properly. If both the test results satisfy the relevant requirements, the lot shall be accepted. Should either of the retest fail, the lot represented shall be deemed as not complying with this standard.

10.2 Other Tests

If any of the samples selected in 9.2 and 9.3 fail to meet the requirement specified in 4, 6 and 8, two more random samples shall be selected from the

same lot. If either of these samples fails to meet the specified requirements, the whole lot shall be rejected.

11 INSPECTION

11.1 All inspection and testing of lead seals covered in this standard shall be carried out by the manufacturer unless otherwise agreed to between the purchaser and the manufacturer. The inspection requirements shall be stated in the enquiry, order and/or test schedule where applicable.

11.2 The purchaser shall notify the supplier while placing the order if it is his intention to inspect the lead seals at the supplier's end. The supplier shall offer the purchaser all the necessary facilities for inspection and testing of the lead seals in accordance with this standard. For this purpose, the

purchaser or his representative may, by prior arrangement, attend to inspect the material, to select and identify the test samples for testing and to witness the test being made.

12 PACKING

Gunny bags containing lead seals of single type only, shall be packed in wooden boxes to prevent damage during transit. However, each package shall not weigh more than 50 kg.

13 MARKING

13.1 Each gunny bag containing lead seals, shall be legibly marked with the following information:

- a) Type of lead seals;
- b) Lot number and date of manufacture;

- c) Nominal mass of 1 000 pieces; and
- d) Indication of the source of manufacture.

13.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

14 TEST CERTIFICATE

The supplier shall provide test certificate for each consignment giving information like dimensions, cast/lot number and corresponding chemical composition etc.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Ores and Feed Stock for Non-Ferrous (Excluding Aluminium and Copper) Industry, their Metals/Alloys and Products Sectional Committee, MTD 09

<i>Organization</i>	<i>Representative(s)</i>
Directorate General Quality Assurance, Katni	SHRI P. MEENA (Chairperson)
Arya Alloys Private Limited, New Delhi	SHRI AMRENDRA K. JHA
Bhabha Atomic Research Centre, Mumbai	DR DHRUVA KUMAR SINGH DR BHASKAR PAUL (<i>Alternate</i>)
Bharat Electronics Limited, Bengaluru	SHRI SHREEDHAR NADIGER SHRI AWADESH KUMAR (<i>Alternate</i>)
B T Solders Private Limited, Bengaluru	SHRI ANANT TOSHNIWAL SHRI S. RAMESH (<i>Alternate</i>)
Chakradhar Chemicals Private Limited, Muzaffarnagar	SHRI NEERAJ KEDIA
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Directorate General of Aeronautical Quality Assurance, Ministry of Defence, New Delhi	SHRI SANTHOSH NAMDEO INGOLE
Directorate General of Quality Assurance, Ministry of Defence, Ichapur	SHRI A. K. VERMA SHRI KARTIKEY SHARMA (<i>Alternate</i>)
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Hindustan Zinc Limited, Udaipur	SHRI M. NAMBI SHRIMATI SHEEBA MASHRUWALA (<i>Alternate</i>)
Indian Bureau of Mines, Nagpur	DR D. R. KANUNGO DR JYOTI SHRIVASTAVA (<i>Alternate</i>)
Indian Institute of Technology, Roorkee	PROF NIKHIL DHAWAN PROF UJJWAL PRAKASH (<i>Alternate</i>)
Indian Lead Zinc Development Association, New Delhi	SHRI K. SRIDHAR SHRI L. PUGAZHENTHY (<i>Alternate</i>)
Indian Rare Earths Limited, Mumbai	SHRI D. SINGH DR B. R. MISHRA (<i>Alternate</i>)

<i>Organization</i>	<i>Representative(s)</i>
IZA India (International Zinc Association), New Delhi	DR RAHUL SHARMA SHRI KENNETH DE SOUZA (<i>Alternate</i>)
J G Chemicals Limited, Kolkata	SHRI ANIRUDH JHUNJHUNWALA
Khosla Engineering Private Limited, Pune	SHRI VISHAL KOTHARI
Ministry of Mines, New Delhi	SHRI J. N. SHARMA
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MSME Testing Center, New Delhi	SHRI D. D. GAJBHIYE SHRI G. PRASAD (<i>Alternate</i>)
National Mineral Development Corporation, Hyderabad	SHRI G. VENKATESWARA RAO
National Test House, Kolkata	SHRI D. RAJAGOPALA RAO SHRI SUHAS PINGALE (<i>Alternate</i>)
Naval Materials Research Laboratory, Thane	SHRI V. P. DESHMUKH DR A. GOURAV RAO (<i>Alternate</i>)
Nile Limited, Hyderabad	SHRI K. H. K. SRINIVAS SHRI S. MAHESH BABU (<i>Alternate</i>)
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The Tinsplate Company of India Limited, Jamshedpur	DR SOURAJYOTI DEY SHRI SUBRATA SADHU (<i>Alternate</i>)
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Member Secretary
SHRI SAAQIB RAAHI
SCIENTIST 'B'/ASSISTANT DIRECTOR
(METALLURGICAL ENGINEERING), BIS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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